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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,298	05/17/2005	Mark Jozef Willem Mertens	NL 021458	5801
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EXAMINER				
LEE, PING				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/535,298

Applicant(s)

MERTENS ET AL.

Examiner

Ping Lee

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orbanes et al (hereafter Orbanes) (US 6,785,667).

Regarding claims 1 and 8-10, Orbanes discloses a data representation apparatus for representing data (scene or environment, or how close to the object) by means of an audio signal. In one embodiment, Orbanes teaches that the system would respond to voice commands (reads on the claimed positionless data, with different commands correspond to the first value and the second value). See col. 37, lines 60-64. In another embodiment, Orbanes teaches that the audible sound is generated by mapping a first action (for example, zoom in) to a first position in a three-dimensional space, and the second action to a second position (col. 38, lines 6-8) and the audio processing unit changes the characteristic of the audio signal (col. 38, lines 2-15). However, Orbanes fails to show that the two embodiments could be combined together. Based on Orbanes' teaching about directional control in response to the voice recognition (col. 37, lines 60-64), one skilled in the art would have expected that the same benefit could be applied to the sound effect simulating the virtual environment by controlling the zooming function using the voice commands. Using the voice commands, the user's hand would be free from the keyboard, mouse or other hand-related input device. Thus, it would have been obvious to one of ordinary skill in the art

to modify Orbanes by utilizing the voice recognition capability to control the sound effect simulating the virtual environment in order to free the user's hand from the input device.

Regarding claim 3, the claimed measurement device reads on microphone.

Regarding claim 4, the example provided on col. 38 is a street in a city, wherein the street has a predetermined region in a three-dimensional space, the voice commands would be mapped to the space.

Regarding claim 5, depending on how the user controls the direction (such as pan left, pan right, zoom in, zoom right), the positionless data signal would be mapped on a curvilinear locus in three-dimensional space.

Regarding claim 6, the claimed specification means reads on the user input selection, and the claimed preferred mapping reads on the preferred street to be viewed.

Regarding claim 7, the claimed selection means reads on the means allowing the user to select different map area, the first type of the audio signal represents the audio in the first area, and the second type of the audio signal represents the audio in the second area.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orbanes as applied to claim 1 above, and further in view of Courneau et al (hereafter Courneau) (US 5,987,142).

Regarding claim 2, Orbanes fails to show that a filter applying a HRTF to the input audio signal to obtain the output audio signal appearing to originate from the first position to the second position. Orbanes teaches in general that the sound would

simulate the virtual environment. However, no specific sound processing algorithm is being disclosed. One skilled in the art would be motivated to search the art related to virtual sound simulation for appropriate sound processing algorithm. Adjusting only volume would not produce a realistic virtual environment. Courneau teaches that the HRTF is being used to simulate the virtual sound environment. HRTFs are functions describing the delay, the frequency response and the amplitude response of the sound at the two ear drums of the user. Thus, it would have been obvious to one of ordinary skill in the art to modify Orbanes in view of Courneau by using a filter as a function of HRTF to generate audio signal in order to simulate a more realistic sound effect in a virtual environment.

Response to Arguments

4. Applicant's arguments filed 10/17/07 have been fully considered but they are not persuasive.

Applicant argued that, on p. 7, Orbanes is not a proper reference for prior art rejection.

Examiner disagrees. Although Orbanes fails to disclose that the device generates a signal related to the pace of the user, it is noted that this feature upon which applicant relies is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Secondly, Orbanes teaches a device that provide sound processing to control the

generated sound based on positionless data (the degree of zoom is a command that is positionless data). This is reasonably pertinent to the particular problem with which the inventor was concerned. The claimed data representation apparatus is a broad term that could read on many different types device representing different types of data. In view of Orbanes, the data representation apparatus is being interpreted as a device to represent the data in scene, an environment or a command (by voice or other user interface). On col. 38, lines 1-15, Orbanes clearly discloses that the data (the degree of zoom) is represented by the level of audio signal. An audio signal processing unit would generate a louder sound, or a different sound when the data (for example, zoom in) is a first value. The audio signal processing unit would generate a softer sound, or another different sound when the data (for example, zoom out) is a second value. The zoom in command would map the command to a first position in a 3-D space (such as in a restaurant) and zoom out command would map the command to a second position in a 3-D space (such as in a street). By comparing louder sound with softer sound, or restaurant sound with street level sound, the user would perceive that the sound is audio signal appears from a first position (restaurant) or a second position (street).

Applicant further argued that combining Courneau with Orbanes would defeat the utility of the Orbanes invention.

Examiner disagrees with applicant's assertion that there is no incentive or motivation for combining Orbanes with Courneau. Orbanes suggests presenting a user with information as closely mimics physical paradigms (see abstract). Controlling the loudness of the sound signal alone would not be able to simulate the changing sound

environment with sufficient detail. Simulating sound using HRTF would provide the listener with a more realistic sound. For example, when the command is to pan left, controlling the loudness would increase all the sound level regardless whether the sound is from the left or right. By using HRTF, the sound source at the left should be enhanced more than the sound source at the right. Therefore, it would have been obvious to modify Orbanes with Courneau for the purpose of generating a more realistic sound to match the select environment.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ping Lee/
Primary Examiner, Art Unit 2615

pwl